

SPECIAL HANDLING REQUIRED IN ACCORDANCE
WITH PARAGRAPH 69, OPNAVINST 3750.6C

Aer-AV-233/56
18 OCT 1958

SIXTH ENDORSEMENT on CO, VMF-451 ADDENDUM to AAR ser 3-58 concerning FJ-4
BuNo 139470 accident occurring 14 May 1958, pilot (b) (6)

From: Chief, Bureau of Aeronautics
To: Chief of Naval Operations (Op-57)
Via: Commander, U. S. Naval Aviation Safety Center

1. Forwarded. It is requested that additional information gained from
the further tests conducted by NOTS be forwarded to the Bureau of Aero-
nautics when available.

(b) (6)

Copy to:
NAVAVSAFCCEN (2)
CMC (Code AAP)
CINCPACFLT
CG, AIRWFAG
CG, THIRD MAW
CO, MAG 15
CO, VMF-451
COMNAVAIRPAC
COMNOTS

(b) (6)
By direction

FF4-1/A25
Serial:
80/ 7435

24 JUN 1958

SPECIAL HANDLING REQUIRED IN ACCORDANCE
WITH PART VII OPNAVINST 3750.6B

FIFTH ENDORSEMENT on VMF-451 AAR ser 3-58 concerning FJ-4 BUNO 139470
accident occurring 14 May 1958, pilot (b) (6)

From: Commander Naval Air Force, Pacific Fleet
To: Chief of Naval Operations (OP-57)
Via: (1) Chief, Bureau of Aeronautics (MA-61)
(2) Commander, U. S. Naval Aviation Safety Center
Subj: VMF-451 AAR ser 3-58

1. Forwarded, concurring in the report of the Aircraft Accident Board,
and in the endorsements thereto. (b) (6)

By direction

Copy to:
NAVAVSACEN (2)(Airmail)
CMC (CODE AAP)
CINCPACFLT
CG, AIRFMFPAC
CG, 3rdMAW
CO, MAG-15
CO, VMF-451

SPECIAL HANDLING REQUIRED
IN ACCORDANCE WITH PART VII
OPNAVINSTR 3750.6B

ORIGINAL

FF13-5
11:d11
A25-1
13 JUN 1958

FOURTH ENDORSEMENT on VMF-451 AAR ser 3-58 concerning FJ-4, BuNo.
139470, accident occurring 14 May 1958, pilot (b)

From: Commanding General, Aircraft, Fleet Marine Force, Pacific
To: Chief of Naval Operations (Op-57)
Via: (1) Commander, Naval Air Force, Pacific Fleet
(2) Chief, Bureau of Aeronautics (Aer-512)
(3) Commander, U. S. Naval Aviation Safety Center

Subj: Major Aircraft Accident Report, case of First Lieutenant (b) (6)
(b) (6) (b) (6) 7332 USMC

1. Forwarded concurring in the report and the endorsements thereto.

Clayton Jerome
CLAYTON C. JEROME

Copy to:
CMC (AAP)
BuAer (Aer-512)
NavAvnSafCen (2)
CincPacFlt
ComNavAirPac
BAR, NAA, Inc, Columbus 16, Ohio
BAR, WAD, Wood-Ridge, N. J.
CG, 3rd MAW
CO, MAG-15
CO, VMF-451

3

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ORIGINAL

SPECIAL HANDLING REQUIRED IN ACCORDANCE
WITH PART VII OF OPN V INST 3750.6B

61:CEM:1da

10 JUN 1958

THIRD ENDORSEMENT on VMF-451 AAR ser 3-58 concerning FJ-4.
BuNo. 139470 accident occurring 14 May 1958, pilot (b) (6)

From: Commanding General, 3d Marine Aircraft Wing
To: Chief of Naval Operations (Op-57)
Via: (1) Commanding General, Aircraft, Fleet Marine Force,
Pacific
(2) Commander, Naval Air Force, Pacific Fleet
(3) Chief, Bureau of Aeronautics (Aer-512)
(4) Commander, U. S. Naval Aviation Safety Center

Subj: VMF-451 AAR ser 3-58, forwarding of

1. Forwarded concurring in the report and in the comments contained in the first and second endorsements.
2. The following administrative errors are noted:
 - a. Enclosures (1) through (5) of the report are not dated.
 - b. In the first endorsement, "Director, U.S. Naval Aviation Safety Center" should be "Commander, U.S. Naval Aviation Safety Center."

J. G. Ennis
I. G. ENNIS

Copy to:
CMC (AAP)
BuAer (Aer-512)
ComNavAvnSafCen (2 Airmail)
CinCPacFlt
ComNavAirPac
BAR, NAA, Inc, Columbus 16, Ohio
BAR, WAD, Wood-Ridge, N. J.
Naval Liaison O, Norton AFB
CO, M/G-15
CO, VMF-451

4

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MAY 29 1958

SPECIAL HANDLING REQUIRED IN ACCORDANCE
WITH PART VII OF OPNAV INST 3750.6B

SECOND ENDORSEMENT on VMF-451 AAR ser 3-58 concerning FJ-4, BuNo. 139470
accident occurring 14 May 1958, pilot (b) (6)

From: Commanding Officer, Marine Aircraft Group-15
To: Chief of Naval Operations (OP-57)
Via: (1) Commanding General, 3d Marine Aircraft Wing
(2) Commanding General, Aircraft, Fleet Marine Force, Pacific
(3) Commander, Naval Air Force, Pacific Fleet
(4) Chief, Bureau of Aeronautics (Aer-512)
(5) Commander, U. S. Naval Aviation Safety Center

Subj: VMF-451 AAR ser 3-58, forwarding of

1. Redressed and forwarded concurring in the report of the aircraft accident board, as submitted, and in the comment contained in the first endorsement. Further comment and recommendation is withheld until receipt of the supplementary report.

2. It is noted that "Damage to Government and Civilian Property" has been omitted from Part III of OpNav Form 3750-1. This should have been reported as, "Alfa - None" and "Bravo - None".



T. V. MURTO JR.

Copy to:
CMC (AMF)
BuAer (Aer-512)
USNavAvnSafCen (2 Air Mail)
CinCPacFlt
ComNavAirPac
BAR, NAA, Inc, Columbus 16, Ohio
BAR, WAD, Wood-Ridge, N. J.
Naval Liaison O, Norton AFB
CO, VMF-451

SPECIAL HANDLING REQUIRED IN ACCORDANCE
WITH PART VII OF NAVINST 3750.6B

S-3:JSP:cec
26 May 1958

FIRST ENDORSEMENT on VMF-451 AAR 3-58, concerning FJ-4 BuNo. 139470,
accident occurring 14 May 1958, Pilot (b) (6)

From: Commanding Officer, Marine Fighter Squadron 451
To: Chief of Naval Operations (Op-57)
Via: (1) Commanding Officer, Marine Aircraft Group 15
 (2) Commanding General, 3d Marine Aircraft Wing
 (3) Commanding General, Aircraft, Fleet Marine Force, Pacific
 (4) Commander, Naval Air Force, Pacific Fleet
 (5) Chief, Bureau of Aeronautics (Aer 512)
 (6) Director, U. S. Naval Aviation Safety Center

Subj: Major Aircraft Accident Report, case of First Lieutenant (b) (6)
(b) (6) (b) (6) /7332 USMC

1. Forwarded.
2. Missile firing techniques other than straight and level firing will be discontinued in this squadron until further amplification of firing methods is received from the Naval Ordnance Test Station, China Lake, California.
3. Further comment on the basic report is being withheld until the disassembly inspection report of the Aero 3A launcher is received. Section VIII and IX of the AAR will be completed upon receipt of the above report.

A. R. Rowland
A. R. ROWLAND
Acting

Copy to:

BuAer (Aer 512)
CNC (Code AAP)
CinCPacFlt
ComNavAirPac
USNavAvnSafCen (2cc Air Mail)
Naval Liaison Officer, Norton AFB
BAR, North American Aviation Inc.,
Columbus 16, Ohio
NOTS China Lake

6

U. S. NAVAL ORDNANCE TEST STATION
CHINA LAKE, CALIFORNIA

IN REPLY REFER TO:
5563/CHA:bja
Serial: 3268
31 JULY 1958

From: Commander, U. S. Naval Ordnance Test Station
To: Commanding Officer, Marine Fighter Squadron 451
Marine Corps Air Station
El Toro, California
Subj: SIDEWINDER Target Rocket; failure to launch from FJ4 airplane
14 May 1958
Encl: (1) NOTS Memo Reg. 4062-15 dtd 29 Jun 58

1. Enclosure (1) reports on a series of tests conducted by this Station in an attempt to duplicate the failure which resulted in the loss of a VMF 451 FJ-4 airplane 14 May 1958. The information contained in this memorandum is not necessarily conclusive in that there was no dynamic loading of the rockets being tested.
2. The refusal of the Target Rocket to launch on 14 May 1958 may well have resulted from a series of defects culminating in a serious malfunction. Needless to say, this Station will continue its investigation, but, for the purpose of completing the accident report for the 14 May 1958 accident, the information in enclosure (1) may be used.

(b) (6)

By direction

Copy to:
BUORD (ReW1)
(ReW4)

SPECIAL HANDLING REQUIRED IN ACCORDANCE
WITH PARAGRAPH 69, OPNAVINST 3750.60

U. S. NAVAL ORDNANCE TEST STATION
China Lake, California

406/DJJ:ldm
Reg. 4062-15
23 June 1958

MEMORANDUM

From: Aerocompatibility Branch (Code 4062)
To: Distribution
Subj: SIDEWINDER Target Rocket or Aero 3A Launcher; Testing of possible
malfunction of
Encl: (1) Table of Firing Conditions and Results

1. A ground firing test was conducted in an attempt to cause a SIDEWINDER Target Rocket, when fired, to remain on a normally operating Aero 3A SIDEWINDER launcher. No attempt was made to simulate the inertia and aerodynamic forces imposed by a maneuvering aircraft, but changes were made to the missile hangers and to the position of the rocket when loaded to simulate (1) a hanger failure and (2) an improperly loaded rocket. Enclosure (1) is a table of the test conditions of each round fired and the results obtained.
2. The test conditions were established to simulate circumstances that had been postulated as possible cause of the recent target-rocket-firing accident which occurred to the Marine FJ-4 over Mojave B. The first test condition, Rounds Nos. 1, 2, and 3, was employed to demonstrate that inversion of the launcher, per se, was not part of the problem.
3. The second test condition, Rounds Nos. 4 and 5, was employed to check a very real loading possibility in which the round is not positioned fully forward and as a result the rear detent rests on top of the missile firing button. In this circumstance, a SIDEWINDER missile could not be fired as the motor firing circuit is broken at the button, but the target rocket can be fired from this position by virtue of its pigtail firing provisions. The reason for concern in this loading circumstance is that the detent block, raised at the rear, operates the snubber release arm assembly, Post No. 55A89C37, which mechanically extends the forward snubbers out into the rail track. Thus it is conceivable that physical interference could exist between the missile forward hanger and the snubbers.
4. The next two test conditions, Rounds 6 through 9, simulated inflight launching conditions where prior flight maneuvers had perhaps failed, respectively, either the aft or the forward missile hanger. The last loading condition, Round No. 10, maximized the binding of the hanger, consistent with actually being able to load the round in the launcher, by rotating the hanger to the maximum allowed by the rail around a longitudinal axis.

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SPECIAL HANDLING REQUIRED IN ACCORDANCE
WITH PARAGRAPH 69, OPNAVINST 3750.6C

ENCLOSURE (1)

5. No rounds failed to launch in the conditions tried. A locked detent or definite wedging of a broken hanger piece or definitely locked front snubbers would cause a launching failure, especially a cold round, but these conditions were not tested since past tests with the SIDEWINDER motor locked in the launcher using a locked detent or stops in front of the hangers had previously been conducted and the rounds, of course, had failed to launch. A loose center band condition should not offer any difficulty since it would be pushed through by the aft hanger.

6. From the results obtained, it is concluded that no launching failure should occur from a normally operating launcher when

- a. the launcher is inverted
- b. the detent is resting on the center portion of the front hanger
- c. one of the three hanger's is failed or omitted
- d. the hangers are malaligned in any manner still permitting the loading of the rocket.

Further tests involving one or more loose or simulated failed hangers, in conjunction with simulated vertical and aerodynamic side loads on the missile, are to be conducted.

(b) (6)

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GROUND LAUNCHED SIDEWINDER TARGET ROCKETS FROM AERO 3A LAUNCHER

10

Round	Mtr Temp °F	Orientation of Launcher	Hanger Condition	Detent Condition	Snubber Condition	Flight Condition
1	70	Inverted	3 hangers normal	Normal	Normal	Normal
2	70	Inverted	3 hangers normal	Normal	Normal	Low and right
3	70	Inverted	Front hanger loose	Normal	Normal	Normal
4	70	Upright	3 hangers normal	Aft detent on center of front hanger	Normal	Normal
5	70	Upright	3 hangers normal	Aft detent on center of front hanger	Normal	Normal
6	70	Upright	No aft hanger	Normal	Normal	Normal
7	70	Upright	No aft hanger	Normal	Normal	Normal
8	-30	Upright	No front hanger	Normal	Normal	Low
9	-30	Upright	No front hanger	Normal	Normal	Low
10	70	Upright	Hangers rotated for maximum binding	Normal	Normal	Normal

Enclosure (1)

PART I - GENERAL

1. AIRCRAFT ACCIDENT BOARD CONVENED BY:			2. DATE OF ACCIDENT TIME	3. AAR SERIAL NO.
Marine Fighter Squadron 451			14 May 1958 0850T	3-58
4. TO: CHIEF OF NAVAL OPERATIONS (Op-57)			5. ENCLOSURES: (1) Pilots Statement (2) Witness Statement (b) (6) (3) Witness Statement (b) (6) (4) Witness Statement (b) (6) (5) Witness Statement (b) (6) (6) Medical Officers Rpt. w/orig. only (7) Photographs (6) (8)	
6. VIA: (1) CO, Marine Aircraft Group 15 (2) CG, 3d Marine Aircraft Wing (3) CG, Aircraft Fleet Marine Force, Pac (4) Commander, Naval Air, Pacific Fleet (5) Chief, Bureau of Aeronautics (Aer 512) (6)				
7. LAST DIRECTOR U.S. NAV. AV. SAFETY CENTER				
8. REPORTING CUSTODIAN (if different than item number 1)				
Same			Same	
9. KIND OF FLT. 10. TIME OF DAY			11. LOCATION OF ACCIDENT 12. ELEV. ABOVE SEA LEVEL	
1AO <input type="checkbox"/> DAWN <input checked="" type="checkbox"/> DAY <input type="checkbox"/> DUSK <input type="checkbox"/> NIGHT			Restricted Area 277 2600	
13. PLACE OF LAST TAKE-OFF			14. CLEARED FROM MCAAS Mojave TO MCAAS Mojave	
MCAAS Mojave				
15. TYPE OF CLEARANCE: <input type="checkbox"/> IFR <input checked="" type="checkbox"/> VFR <input type="checkbox"/> LOCAL <input type="checkbox"/> OPERATIONAL <input type="checkbox"/> AIRWAYS <input type="checkbox"/> DIRECT <input type="checkbox"/> OTHER, Specify				
16. TIME IN FLT. 17. TYPE ACCIDENT			18. PHASE OF FLIGHT	
0420 (G1) ejection			(5) flight	
19. MODEL FJ-4 20. SERIAL NO. 139470 21. DAMAGE TO AIRCRAFT A			22. DOL. COST 197,000	23. AIRSPEED (KTS) 24. A/C WT. 240 17,500
25. LIST MODEL, SER. NRS, REPORTING CUSTODIAN AND DAMAGE CLASSIFICATION OF ANY OTHER A/C INVOLVED (complete separate OPNAV Form 3750-1 for each A/C)				
SECTION B - PERSONNEL INFORMATION		26. RANK RATE 27. DATE DEP'D 28. DATE DEP'D 29. DATE OF BIRTH 30. AGE		
PILOT AND CO-PILOT AIRCRAFT		26. RANK RATE 27. DATE DEP'D 28. DATE DEP'D 29. DATE OF BIRTH 30. AGE		
PILOT		26. RANK RATE 27. DATE DEP'D 28. DATE DEP'D 29. DATE OF BIRTH 30. AGE		
CO-PILOT		26. RANK RATE 27. DATE DEP'D 28. DATE DEP'D 29. DATE OF BIRTH 30. AGE		
31. PERSONNEL PILOT/PERSONNEL AT CONTROL AT TIME OF ACCIDENT		31. PERSONNEL PILOT/PERSONNEL AT CONTROL AT TIME OF ACCIDENT		
(b) (6)		1st Lt. (b) (6) 7332 10 Nov 53 (b) (6) 29		
32. PER- SONNEL		33. OPERATIONAL FLT. TRAINER		
PILOT		<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	VMF-451, MAG-15, 3dMAW
CO-PILOT		<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	FJ-4 Operational Trainer
34. ALL SERIES THIS MODEL		35. ITEM TO WHICH ATTACHED		
ALL MODELS		36. TYPE INSTRU- MENT CARD		
ALL MODELS IN LAST 12 MOS.		<input type="checkbox"/> STANDARD		
ALL MODELS IN LAST 3 MOS.		<input type="checkbox"/> SPECIAL		
ALL SERIES THIS MODEL		37. PILOT		
ALL SERIES THIS MODEL, LAST 12 MONTHS		<input type="checkbox"/> PILOT		
ALL SERIES THIS MODEL, LAST 3 MONTHS		<input type="checkbox"/> PILOT		
NAME (last, first and middle initial)		RANK RATE	SERVICE NO.	ORG. TO WHICH ATTACHED
(b) (6)		1st Lt	(b) (6)	VMF-451, MAG-15
38. TOTAL PILOT HOURS		39. DATE LAST FLIGHT, ALL SERIES THIS MODEL		
ALL MODELS		40. DURATION LAST FLIGHT, ALL SERIES THIS MODEL		
ALL MODELS IN LAST 12 MOS.		41. SERVICE NO.		
ALL MODELS IN LAST 3 MOS.		42. ORG. TO WHICH ATTACHED		
ALL SERIES THIS MODEL		43. INSTRUCTIONS FOR BILLET POSITION		
ALL SERIES THIS MODEL, LAST 12 MONTHS		44. BILLET POSITION		
ALL SERIES THIS MODEL, LAST 3 MONTHS		45. BILLET POSITION		
NAME (last, first and middle initial)		RANK RATE	SERVICE NO.	ORG. TO WHICH ATTACHED
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AIRCRAFT ACCIDENT REPORT

OPNAV REPORT 3750-1

1. CEILING	2. VISIBILITY	3. WIND DIRECTION AND VELOCITY	4. TEMPER- ATURE	OUTSIDE RUNWAY	5. DEW POINT	6. ALTIMETER SETTINGS
NA	NA	NA	NA	NA	NA	NA
7. OTHER WEATHER CONDITIONS (winds aloft, icing levels, state of sea, etc., if pertinent to accident)						

SECTION D ACCIDENT FACTORS INVOLVED	ITEM	P/S	ITEM	P/S	ITEM	P/S
	PILOT ERROR		LANDING SIGNAL OFFICER ERROR		MATERIAL FAILURE OR MALFUNCTION	
	CREW ERROR		OTHER PERSONNEL ERROR, Specify		MATERIAL INADEQUACY	
	SUPERVISORY PERSONNEL ERROR		ADMINISTRATIVE ERROR		ROLLING AND PITCHING DECK/ROUGH SEAS	
	MAINTENANCE PERSONNEL ERROR		AIRPORT OR CARRIER FACILITIES		UNDETERMINED	X
SERVICING PERSONNEL ERROR		WEATHER		OTHER, Specify		
FOR ACCIDENTS ABOARD DEPLOYED CARRIERS (Complete following Section on Pilot)						
1. DATE DEPLOYED		2. DAY-HOURS/LANDINGS LOGGED SINCE DEPLOYED		3. DAY-HOURS/LANDINGS LOGGED LAST 30 DAYS		
NA						
4. INSTRUMENT HRS. LOGGED SINCE DEPLOYMENT		5. NIGHT-HOURS/LANDINGS LOGGED SINCE DEPLOYED		6. NIGHT-HOURS/LANDINGS LOGGED LAST 30 DAYS		

SECTION E ACCIDENT FACTORS INVOLVED	DATE OF MANUFACTURE	SERVICE TOUR	MONTHS IN THIS TOUR	TOTAL NO. OF FLYING HOURS	FLIGHT HRS. SINCE LAST OVERHAUL	FLIGHT HRS. SINCE ACCEPT- ANCE	TYPE CHECK LAST PERFORMED	FLIGHT HRS. SINCE LAST CHECK	NO. OF DAYS SINCE LAST CHECK	
	NA	ENGINE MODEL	SERIAL NO. OF ENGINE							
	NO. 4 NO. 5 NO. 6 NO. 7 NO. 8 NO. 9 NO. 10	NO. 11 NO. 12 NO. 13 NO. 14 NO. 15 NO. 16 NO. 17	NO. 18 NO. 19 NO. 20 NO. 21 NO. 22 NO. 23 NO. 24	NO. 25 NO. 26 NO. 27 NO. 28 NO. 29 NO. 30 NO. 31	NO. 32 NO. 33 NO. 34 NO. 35 NO. 36 NO. 37 NO. 38	NO. 39 NO. 40 NO. 41 NO. 42 NO. 43 NO. 44 NO. 45	NO. 46 NO. 47 NO. 48 NO. 49 NO. 50 NO. 51 NO. 52	NO. 53 NO. 54 NO. 55 NO. 56 NO. 57 NO. 58 NO. 59	NO. 60 NO. 61 NO. 62 NO. 63 NO. 64 NO. 65 NO. 66	NO. 67 NO. 68 NO. 69 NO. 70 NO. 71 NO. 72 NO. 73

a. DID FIRE OCCUR? BEFORE ACCIDENT AFTER ACCIDENT DID NOT OCCUR b. DID EXPLOSION OCCUR IN FLIGHT? YES NO

c. CHECK IF APPLICABLE d. HAS DIR BEEN REQUESTED? YES NO e. FAILED COMPONENTS INVOLVED

AMP FOR SERIAL

CHECK BELOW ITEMS PRESENT IN THIS ACCIDENT

f. AIRCRAFT DESIGN g. UNDETERMINED h. SURFACE FACILITIES

i. AIRCRAFT EQUIPMENT j. TECHNICAL INSTRUCTION k. HUMAN ENGINEERING
(e.g. cockpit configurations)

l. MAINTENANCE m. OTHER, Specify

n. ALTITUDE AT
MALFUNCTION o. AIR
SPEED (MPH) p. OPERATING
TEMPERATURE q. WEIGHT OF
AIRCRAFT r. C.G.(S/MAC) s. KIND OF FUEL t. FUEL
PRESSURE

NA NA NA NA NA NA NA

u. EVIDENCE OF FUEL CONTAMINATION v. CAUSE OF ENGINE FAILURE OR FLAMEOUT

NA NA

w. FUEL CONTROL REGULATOR/CARBURETOR (List Stock and Ser. nos., give time since last overhauled)

NA NA

(If additional space is necessary, attach additional sheet(s))

AIRCRAFT ACCIDENT REPORT

OPNAV REPORT 3750-1

PART II - MAINTENANCE, MATERIAL AND FACILITIES DATA (Cont'd)

- SECTION A - FACILITIES DATA**
1. GENERIC BASIC FACILITIES INVOLVED IN THE ANALYSIS OF ACCIDENT
- a. CLEARANCE AUTHORITY h. RUNWAY o. EMERGENCY ARRESTING
 b. FLIGHT PLANNING INFOR- i. WATER LANDING AREA p. GEAR (Runway)
 c. MATION SOURCE j. APPROACH ZONE q. CRASH AND RESCUE
 d. LANDING AIDS (GCA, CCA, k. END ZONE r. SEARCH AND RESCUE
 e. ILS, etc.) l. SHOULDERERS s. CATAPOULT
 f. TRAFFIC CONTROL TOWER m. TAXIWAY t. ARRESTING GEAR (Carrier)
 g. (Field or Ship) n. PARKING AREA u. BARRIER OR BARRICADE
 h. APPROACH AND ENROUTE w. OTHER, Specify... v. FLIGHT DECK
 i. AIDS TO NAVIGATION
 j. RUNWAY WATCH
 k. LANDING SIGNAL OFFICER
 l. OTHER, Specify...

b. EQUIPMENT INVOLVED:	<input type="checkbox"/> CATAPOULT	<input type="checkbox"/> PRESSURE SETTINGS	<input type="checkbox"/> C. WIND OVER DECK	<input type="checkbox"/> D. RELATIVE HEADWIND	<input type="checkbox"/> E. APPROACH SPEED (SPN-12 READING)
c. MARK NUMBER	<input type="checkbox"/>	d. MODEL NO.	<input type="checkbox"/>	e. LOCATION ON SHIP	f. LAUNCHING BRIDLE AND CONFIGURATION USED

J. CATAPOULT/ARRESTING GEAR BULLETINS OR NOMOGRAMS USED

IN THIS POSITION SHALL BE COMPLETED WHENEVER AN AIRCRAFT ACCIDENT INVOLVES MALFUNCTIONING OF ARRESTING GEAR, BARRIER AND/OR BARRICADE EQUIPMENT OR (2) AN AIRCRAFT ACCIDENT INVOLVES MALFUNCTIONING OF ARRESTING GEAR, BARRIER AND/OR BARRICADE EQUIPMENT. MINOR ACCIDENTS OR ROUTINE DAMAGE TO CABLES, WELDINGS AND OTHER EXPENDABLE COMPONENTS NEED NOT BE REPORTED.

2. SHIPS DATA	DECK PENDANT	DECK PENDANT	CONTROL VALVE SETTINGS			ACCUMU- LATOR PRESSURE (PSI)	COMMENTS (for cable failure specify number of landings and months in service)
			DECK RUNOUT (FT.)	RAM TRAVEL (IN.)	CONSTANT PRESSURE DOME (P.S.I.)	CONSTANT RATIO	
	DECK PENDANT						
	BARRIER						
	BARRIER						
	BARRICADE						

PART III - ITEM

PART III - REMARKS (continue on separate pages if necessary)

Copies to:
 BuAer (Aer 512)
 CMC (Code AAP)
 CinCPacFlt
 ComNavairPac
 USNavAvnSafGen (2cc Air Mail)
 Naval Liaison Officer, Norton AFB
 BAR, North American Aviation Inc.,
 Columbus 16, Ohio
 NO TU China Lake

21

(b) (6)

(b) (6)

(D) (6)

(b) (6)

(b) (6)

(D) (6)

(b) (6)

(b) (6)

MAJOR USMC, S-3 Officer
(ser)
UNIT MILLETLt. USNR(NC)
(ser)
UNIT MILLETMajor, USMC, Maint. Officer
(ser)
UNIT MILLETMajor, USMC, Safety Officer
(ser)
UNIT MILLETCapt., USMC, Eng. Officer
(ser)
UNIT MILLET

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PART V - THE ACCIDENT

1. At approximately 0830, on 14 May 1958, First Lieutenant (b) (6) (b) (6) took off from MCAS Mojave on a scheduled air-to-air missile firing hop. Lt. (b) was the designated leader of a flight consisting of three other squadron pilots and an inspector pilot. The flight took off and rendezvoused without incident and then proceeded to the Mojave "BRAVO" Range (restricted area 277) as briefed. (see enclosure 7A). At approximately 0845 Lt. (b) contacted China Lake tower and received clearance for his flight to enter the range. Shortly after entering the range, Lt. (b) instructed the flight to drop back as he previously had briefed. He then nosed up approximately thirty (30) degrees above the horizon, rolled inverted, and commenced an easy pull through intending to fire his target and sidewinder missile from this attitude. About ten (10) degrees above the horizon and at an altitude of approximately 33000 feet he fired his target rocket. The rocket ignited but remained on the rails and caused the aircraft to enter a violent yaw which was followed by an uncontrollable spinning maneuver. Unable to effect recovery, Lt. (b) successfully ejected at approximately 26000 feet. The aircraft crashed at $117^{\circ} 9'$ west and $35^{\circ} 45'$ north with an angle of impact of approximately seventy (70) degrees. (see enclosures (7A) and (7B)).

PART VI - DAMAGE TO AIRCRAFT

1. The aircraft contacted the ground with an angle of impact of approximately seventy (70) degrees and was completely demolished by the explosion and fire that followed. (see enclosures (7B) and (7C)). The beam adapter outboard (P/N 209-63012-1), Pylon Aero 3A (P/N LH-1440-511-9255M558), Launcher Aero 3A (P/N 209-89-855), and the target rocket, MK-10 motor, inert head were the only parts recovered. (see enclosures (7C), (7D) and (7E)).

PART VII - THE INVESTIGATION

1. An inspection of the aircraft log books revealed the following information:

a. Aircraft:

Months in tour	17
Time since Navy acceptance	259.3
Time this tour	253.9
Time since last check	25.9
Type last check	1st Maintenance cycle 120 hours
Date last check	21 April 1958

b. Engine:

Engine serial	W-610104
Number of overhauls	4
Time since overhaul	25.9
Time since new	324.9

2. An investigation of the accident revealed the following facts:
- a. First Lieutenant (b) (6) was designated a naval aviator on 10 November 1953 and has accumulated a total of 1110.0 flight hours.
 - b. Lt. (b) (6) has flown a total of 638.7 hours in jet aircraft of which 136.5 hours have been in the FJ-4.
 - c. The squadron was undergoing an operational readiness inspection at the time of this accident.
 - d. Lt. (b) (6) was the designated flight leader on a scheduled air-to-air missile firing hop.
 - e. The flight was a scheduled event for the operational readiness inspection and consisted of:
 - 1stLt. (b) (6) - Flight leader
 - 1stLt. (b) (6) - Wingman
 - 1stLt. (b) (6) - Section leader
 - 1stLt. (b) (6) - Wingman
 - Major (b) (6) - Inspector/pilot
 - f. Lt. (b) (6) and Lt. (b) (6) aircraft were armed with a target rocket and a sidewinder missile. Lt. (b) (6) and Lt. (b) (6) aircraft were armed with a target rocket each.
 - g. Lt. (b) (6) was assigned FJ-4, modex number V4-14, bureau number 139470 for this flight.
 - h. Departure from the flight line, taxi to the duty runway, and 100% run up were normal in all respects.
 - i. A check of previous yellow sheets showed no discrepancies that could have effected this flight.
 - j. At approximately 0830 Lt. (b) (6) became airborne, rendezvoused his flight, and proceeded to the Mojave "BRAVO" Range as briefed. (see enclosure (7A)).
 - k. At approximately 0845 Lt. (b) (6) contacted the China Lake tower and received clearance for his flight to enter the range.
 - l. Shortly after entering the range Lt. (b) (6) instructed Lt. (b) (6) to fire his target rocket.
 - m. Lt. (b) (6) was able to successfully track this rocket so prepared to fire his own target rocket and sidewinder missile.

m. He nosed up to approximately thirty (30) degrees above the horizon, rolled inverted, and commenced an easy pull through intending to fire his rocket and missile from this attitude.

n. When approximately ten (10) degrees above the horizon Lt. (b) attempted to fire the target rocket located on the outboard pylon of his left wing.

o. The maneuver was deliberate and was performed as previously briefed.

p. The rocket was observed by other members of the flight to ignite but remain on the rails.

q. The aircraft was immediately thrown into a violent yaw followed by an uncontrollable spin.

r. After approximately two (2) turns in the spin Lt. (b) the section leader, instructed Lt. (b) to eject.

s. Lt. (b) at this time, was experiencing difficulty from "G" forces as a result of the rapid rate of spin.

t. At approximately 26000 feet he was able to get one hand up to the curtain and successfully eject from the aircraft.

u. The firing of the canopy, seat ejection, automatic lap belt opening, and separation from the seat occurred rapidly and smoothly.

v. A free fall was executed to 15000 feet where the automatic barometric release deployed the parachute normally.

w. Lt. (b) PH-5 helmet received a sharp blow from the canopy as it was jettisoned. It tore off the visor button and cracked the visor guard and helmet top. (see enclosure (7F)). The Hardeman Retention Kit enabled Lt. (b) to retain his helmet throughout the ejection and descent to the ground.

x. The aircraft crashed at 117° 9' west, 35° 45' north, with an angle of impact of approximately seventy (70) degrees. (see enclosures (7A), (7B) and (7C)).

y. The aircraft was almost completely demolished by the resulting impact, explosion and fire.

z. The target rocket, beam adapter outboard (P/N 209-63012-1), Pylon Aero 3A (P/N L-1440-511-9255M558), and Launcher Aero 3A (P/N 209-89855) were recovered from the wreckage. (see enclosures (7C), (7D), and (7E)).

aa. The outboard beam adapter, aero 3A pylon, and Aero 3A launcher were recovered from the wreckage and turned over to the Naval Ordnance Test Station, China Lake, California for a disassembly inspection report. Section VIII and IX of this report will be completed and forwarded by this board upon receipt of the DIR.

SPECIAL HANDLING REQUIRED IN ACCORDANCE
WITH PART VII OPNAVINST 3750.6B

(b) (6) (b) (6) USMC, CONCERNING ACCIDENT INVOLVING FJ-4, BUREAU NO. 139470

On 14 May 1958 I was scheduled to lead a flight of five FJ-4 aircraft from MCAS Mojave to the Mojave "Bravo" Range. Mission was rocket and missiles. Briefing commenced at 0700 and ended at 0800. Yellow sheets were checked and signed. The flight taxied at 0818. Takeoff was at 0830. Flight joined up on climbout to target area. At 0845 I contacted MOTS China Lake tower and the flight was cleared to enter the range. Immediately after entering the range my wingman fired a 5 inch target rocket which I was able to track successfully. I then pulled up about 30 degrees above the horizon, rolled inverted and commenced an easy pull through intending to launch successively a 5 inch target rocket from station number one and sidewinder from station number four. At approximately 10 degrees above the horizon I fired the 5 inch target rocket. The motor fired but failed to separate from its aero 3A launcher. The aircraft entered a violent right skid or yaw which was uncontrollable. Aircraft then snapped violently into what I presumed to be a spin. Throttle was retarded to idle and forward stick was applied. After several turns of great violence someone called me to eject. I kept forward stick applied for a short while and then elected to eject. I experienced some difficulty in positioning properly in the seat and was able to get only my right hand on the face curtain. Canopy fired followed by seat ejection. Automatic lap belt and seat separation occurred rapidly and smoothly. Ejection altitude was estimated at between 25 and 28 thousand. Wrist watch and kneepad were lost on ejection all other equipment stayed in place. Mask and helmet remained secure, visor was down. Freefall from ejection to 15,000 feet where the barometric opener deployed the parachute was normal. Parachute deployment was good with no rips or fouling. Landing was on a rocky hillside. No dragging occurred due to the light wind conditions. Helicopter from MCAS China Lake picked me up at 0935. After preliminary examination at the China Lake dispensary I was returned to MCAS Mojave.

(b) (5)

(b) (6)

SPECIAL HANDLING REQUIRED IN ACCORDANCE
WITH PART VII OF NAVINST 3750.6B

STATEMENT OF FIRST LIEUTENANT (b) (6) (b) (6) USMC, CONCERNING
ACCIDENT INVOLVING FJ-4, BUREAU NO. 139470

At about 0850, 14 May 1958 I was in a flight of five FJ-4 aircraft led by Lt. (b) (6). Other members of the flight were Lt. (b) (6), Lt. (b) (6) and an observer, Major (b) (6). Lt. (b) (6) and Lt. (b) (6) A/C were armed with one (1) target rocket and one (1) sidewinder each.

Lt. (b) (6) was flying wing on Lt. (b) (6) and Lt. (b) (6) was on my wing. My section was to the left of Lt. (b) (6). Major (b) (6) was to the rear.

China Lake tower cleared us to enter the Mojave "Bravo" range at about 0850. We were flying a heading of about 160° at about 32,000 feet altitude. Lt. (b) (6) fired his target rocket which Lt. (b) (6) jacked with his sidewinder. Lt. (b) (6) then turned his switches on, pulled up and rolled over on his back as he had briefed. At this time he entered the contrail level at 34,000 feet altitude. I called him and advised him that he was in the cons. At this time his A/C was inverted and the nose was just dropping to the horizon. As he fired his target rocket it appeared to fire but did not leave the pylon. The flares on the rocket were burning as the A/C went into a violent spin. Realizing that there was great danger of fire from the burning rocket and flares near the wet wing I called for him to eject after 1½ to 2 turns in the spin. The A/C continued to turn about 2 turns more before I saw the canopy and seat separate from the A/C. The A/C was in a nose low, inverted position at this time. Almost immediately Lt. (b) (6) separated from the seat and shortly thereafter was lost from my sight.

At this time I called the flight for Lt. (b) (6) to follow Lt. (b) (6) down and that I was going to stay up and transmit a MAYDAY call. I switched my IFF to emergency and switched my ARC-27 to transmit on GUARD. "July" came up immediately and dispatched a helicopter from Edwards A.F.B. About this time I observed an open parachute and saw the A/C crash into the ground. Lt. (b) (6) and Major (b) (6) went down to an altitude of 7500 feet. Lt. (b) (6) was at 20000 feet and I stayed at 30000. "July" directed the Helicopter from Edwards, Mojave, and China Lake. Helicopter came within the area, Lt. (b) (6) spotted it and directed it to Lt. (b) (6) who was observed to be standing up and talking on the emergency (PRC-17) radio.

After the Helicopter arrived Major (b) (6) returned to Mojave. Lt. (b) (6) had returned earlier because there were too many A/C in the area.

After Lt. (b) (6) was safely in the helicopter Lt. (b) (6) and myself returned to Mojave. (b) (6)

Lt. (b) (6) was designated a naval aviator on 1 Aug 1957 and has flown 494.9 hours of which 105.2 hours are in the FJ-4. In view of his flight experience the statement is considered credible.

SPECIAL HANDLING REQUIRED IN ACCORDANCE
WITH PART VII OPNAVINST 3750.6B

STATEMENT OF FIRST LIEUTENANT (b) (6) (b) (6) USMC, CONCERN-
ING ACCIDENT INVOLVING FJ-4. CIRCUIT NO. 129470

(b) At 0830 11 May, Event 2B (LIXELAND A-C) was launched consisting of Lt. (b) (6) Lt. (b) (6) Lt. (b) (6) and Major (b) (6). We proceeded to the range "BRAVO" range for missiles and rockets. We were cleared onto the range and Lt. (b) (6) fired his rocket successfully. Lt. (b) then said he was commencing his firing run. At about 33,000 feet and approximately 240 knots Lt. (b) nosed up and rolled inverted. (b) (5)

(b) (5) I do not recall seeing the rocket leave the A/C. The A/C started to spin immediately, seemingly inverted at first and went down. About one half way down some pieces left the A/C (possibly canopy) but the chute was not seen for some time. Eventually it blossomed and the descent took roughly 10-12 minutes. Lt. (b) (6) went down to look, so I went to 20,000 and gave a MAYDAY. Lt. (b) came up on his survival radio and said he was okay. My section leader Lt. (b) (6) said to go home so I returned to Mojave and landed at 0925.

(b) (6)

Lt. (b) (6) was designated a naval aviator on 7 June 1957 and has 415.3 flight-hours of which 85.6 are in the FJ-4. In view of his flight experience the statement is considered credible.

SPECIAL HANDLING REQUIRED IN ACCORDANCE
WITH PART VII OF NAVINST 3750.6B

STATEMENT OF FIRST LIEUTENANT (b) (6) (b) (6) USMCR, CONCERNING
ACCIDENT INVOLVING FJ-4, BUREAU NO. 139470

At approximately 0827 PDT I took off from MCAAS Mojave on the wing of VM-14 flown by Lt. (b) (6). We were the first section of a flight of five with the number 5 man being the observer. Our mission was a rocket and missile hop with a time on target in the Mojave "BRAVO" range of 0900. After join-up we climbed to approximately 30,000 feet and the flight leader (Lt. (b) (6)) obtained permission from NOTS China Lake tower to enter the range. Upon entering the range Lt. (b) (6) cleared me to fire my rocket so he could practice tracking it. After tracking the rocket I fired, Lt. (b) (6) told the flight to drop back so he could fire his rocket and missile. I was on his right wing. Lt. (b) (6) then pulled his nose up approximately 20° and rolled on his back. As his nose fell to the horizon I saw a flash followed by a puff of white on his left wing (the closest wing to me on his back), at that time the A/C appeared to go into a violent skid and then flipped back upright. After turning upright the A/C still appeared to be in this violent skid then all of a sudden the nose went above the horizon the left wing dropped and the A/C started a spin to the left. I immediately started down after the A/C and followed it down until I saw the parachute. I followed the chute down and made a pass over the pilot and saw that he was waving his arms. I then climbed to 8,500 feet and orbited the pilot until the helicopter arrived.

(b) (6)

Lt. (b) (6) was designated a naval aviator on 29 June 55 and has flown 1366.6 flight hours of which 217.4 are in the FJ-4. In view of this flight experience the statement is considered credible.

SPECIAL HANDLING REQUIRED IN ACCORDANCE
WITH PART VII ORNAVINST 3750.6B

STATEMENT OF MAJOR (b) (6) (b) (6) USMC, CONCERNING ACCIDENT INVOLVING FJ-4, BUREAU NO. 139470

I was assigned as observer check pilot on a scheduled OBI missile flight.

The flight took off at 0827 PDT at MCAAS Mojave. The flight climbed to 30,000 feet cleared itself and then entered the Mojave "BRAVO" area.

The division leader had his wingman fire his HVAR and reported his tracking okay. He then indicated he was ready to fire pulled up slightly and rolled over on his back. His nose was already falling through (b) (5)

(b) (5) At any rate when the missile or rocket was fired it did not leave the launcher this occurred at 0850. The airplane was thrown into a skid and then entered what I believe was an inverted spin. The rocket or missile continued to burn for quite awhile say two-three minutes, in a small concentrated area at the tail.

One of the pilots immediately started yelling bail-out. At a very rough estimate of about 15 to 20,000 feet the pilot bailed out evidently having tried, to bring the airplane out of the spin. At about 10,000 (again very rough estimate) the airplane recovered and flew around for several minutes almost leading me to believe the pilot was still in the airplane.

Shortly after, the pilot's chute was spotted, the airplane crashed and exploded into the side of a mountain. A secondary explosion occurred a good five minutes later.

The pilot landed about a mile from the airplane near the top of an adjacent mountain and immediately got up and waved to the low cover pilot.

An emergency transmitter used by the downed pilot came in loud and clear once directing the helicopter.

(b) (6)

In view of Major (b) (6) 1600 jet flight hours and his recent tour at NATC Patuxent River his statement is considered credible.

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MEDICAL OFFICER'S REPORT OF AIRCRAFT ACCIDENTS/INCIDENTS AND GROUND ACCIDENTS

OPNAV REPORT-1720-7

GENERAL INSTRUCTIONS

1. This report shall be filed in the event of an aircraft accident/incident which involves one or more of the following:—
 Death
 Ditching
 Injury
 Water Crash
 Bail-out or Ejection (attempted or successful)
 Whichever physiological or psychological factors are involved
 Aircraft Ground Accidents resulting in serious injury
 Surgeon
 2. Completion of the form shall be the responsibility of the flight surgeon.
 3. Type accident and damage code refer to OPNAV INSTRUCTION 1720.6A
 4. This form shall be prepared in quadruplicate. One copy shall be turned over to the Aircraft Accident Board (or the Survival and
- Intelligence Officer in the case of combat incidents), and the original shall be air mailed (regular mail within 250 miles of Washington, D.C.) direct to Chief of Naval Operations (OP-57) Navy Department, Washington 25, D.C. within 4 working days following the accident. The third copy shall be mailed direct to Safety Equipment Branch, BuAer, Navy Department, Washington 25, D.C. The fourth copy shall be forwarded direct via air mail (regular mail within 250 miles of Norfolk, Va.) to the U.S. Naval Aviation Safety Activity, Naval Air Station, Norfolk 11, Virginia. When applicable, the "Survival and Intelligence" report forms must be completed for each aircraft wherein one or more of the requirements in paragraph 1, above are applicable. (Additional copies may be prepared for use of squadron flight surgeons and other interested individuals)

FROM (Ship or station address)	2. SERIAL NO.	3. ACCIDENT INCIDENT (Geographic location)	4. TIME (hours)	5. DATE
USAS M. Toro (Santa Ana) Calif		25 miles East of Trona, San Bernardino County, California	0600-13-0000-0000	
California				
OVERHELD BY THIS REPORT	NO. OCCUPANTS	UNIT OPERATING	TYPE ACCIDENT	GRADE
2 OTHER	1	USAS M. Toro 300-35-300-300	0-1	
PLANE (if involved)	4. NO. NO.	NO. OCCUPANTS	UNIT OPERATING AIRCRAFT	

6. NAME OF PILOT IN CONTROL OF AIRCRAFT AT TIME OF ACCIDENT/INCIDENT (Last, first, middle)	7. UNIT PILOT ATTACHED TO		
(b) (6)	VMF-451, VMF-312, VMF-511		
SURGEON'S CHECK LIST	8. ALL PARTS OF FORM COMPLETED SURVIVORS NARRATIVES PHOTOS AS NEEDED RECOMMENDATIONS DODGE FURNISHED		
10. PILOT FILLED BY	SIGNATURE DATE		
(b) (6)	Major STANDING Acting		
11. AIRCRAFT ACCIDENT	12. AIRCRAFT INCIDENT	13. COMBAT INCIDENT	14. GROUND ACCIDENT

15. ACCIDENT DESCRIPTION
 INCLUDE HERE A PARAGRAPH GIVING A BRIEF BUT Factual ACCOUNT DESCRIBING THE ACCIDENT/INCIDENT. INCLUDE SUCH CRUITS AS SPEED, ESTIMATED OF "G" FORCES, ANGLES OF IMPACT, SPEED ON IMPACT, ATTITUDE ON IMPACT, ETC. ATTACK DIAGRAMS WHEN PERTINENT.

See addition #1

22

16. PILOT FACTORS (Check pertinent pilot factors listed below)			
PILOT	CO-PILOT	PILOT	CO-PILOT
<input checked="" type="checkbox"/> IN CONTROL AT TIME OF ACCIDENT/INCIDENT		HYPOKIA SUSPECTED	
<input checked="" type="checkbox"/> AMOUNT OF FLIGHT TIME IN LAST 24 HOURS	3	CARBON MONOXIDE POISONING SUSPECTED	
NUMBER OF FLIGHTS IN LAST 24 HOURS	3	FAULTY VISION	
NUMBER HOURS DUTY IN LAST 24 HOURS	20	AEROMOBILISM	
HOURS SINCE LAST FULL MEAL	10:00 hrs	BLACKOUT, GREYOUT, REDOUT	
TIME AT CONTROLS THIS FLIGHT	0:00 hrs	VERTIGO	
TOTAL FLIGHT TIME	0:100	NIGHT BLINDNESS	
TOTAL FLIGHT TIME IN MODEL	200	FATIGUE	
NUMBER PREVIOUS ACCIDENTS	2	DOMESTIC DIFFICULTIES	
DATE OF LAST ACCIDENT	14 Dec 57	UNFAMILIARITY IN TYPE AIRCRAFT	
NUMBER DAYS GROUNDED IN LAST MONTH	0	ANXIETY REACTION	
DATE LAST LOW PRESSURE / DECOMPRESSION	14 Dec 57	LAST CER (date and score)	0-25-57
AMOUNT SLEEP IN LAST 24 HOURS	7 hrs	OTHER PERTINENT FACTORS IN ACCIDENT (describe below)	
17. COMMENTS ON ITEMS CHECKED WHICH ARE PERTINENT TO ACCIDENT/INCIDENT. WHEN APPLICABLE, COMMENT BELOW ON ANY OF THE ABOVE FACTORS AFFECTING CREW MEMBERS OR PASSENGERS			

(b) As an experienced aviator with over 1100 hours of flight time, none of the above factors are considered to be contributory to this accident. A blood alcohol determination was negative, & blood sugar was 94 mg %.

SUMMARIES OF SAFETY EQUIPMENT, INJURIES AND CAUSE

DIRECTIONS

1. This represents form for each person.
 2. Under Incident Class, use following key:
 Class "A" Fatal injuries, as considered for reporting procedure as one that results in death prior to submission of the Aircraft Accident Report.
 Class "B" Critical injury is considered for reporting procedure as injury which, although not resulting in death, results in hospitalization in the hospital or from complications thereof. Critical injuries resulting in death within 30 days shall be reported by letter to the original addresser.
 Class "C" Serious injuries are those which result in hospitalization for more than 24 hours but less than 30 days, or which require medical treatment but from which the individual will be expected to recover. Unplanned critical conditions or complications immediately

listed in this category which result in death within 30 days shall be reported by letter to the original addresser.
 3. Under Injury Type, use following key:
 Class "A" Critical injury - lost and presumed drowned.
 Class "B" Critical injury - missing.
 4. Under disposition, use following key:
 "G" - grounded
 "T" - treated and returned to duty
 "R" - remain recovered
 "P" - remains not recovered

(b) (6)	(b) (6)	1st Lt	29	(b) (6)	(b) (6)																																																																						
B. POSITION OCCUPIED AT TIME OF ACCIDENT																																																																											
Cockpit		N/A		N/A																																																																							
PILOT																																																																											
1. SAFETY EQUIPMENT	MODEL/TYPE	AVAILABLE	NOT USED	DAMAGED	LOST																																																																						
SHOULDER HARNESS	MIL-HD-8-970	X	X																																																																								
LAP BELT	M. S. - 16030-2A	X	X																																																																								
HERTIA REEL	18050-130-23	X	X																																																																								
G. SUIT	B-37-5-48403b-44	X	X																																																																								
HELMET	H-5 Hardman Retainer	X		X																																																																							
OXYGEN MASK	A-13A	X	X																																																																								
GOGGLES	Visor H-5	X		X																																																																							
SHOES (TYPE)	Field	X	X																																																																								
FLIGHT SUIT, OTHER THAN "G" (TYPE)	Sum-Flt	X	X																																																																								
EXPOSURE SUIT (TYPE)	None																																																																										
OTHER (TYPE)	None West II Flight Gloves X	X																																																																									
2. OTHER INFORMATION (List all injuries, "X" if designed, etc., will not be accepted if any equipment failed, destroyed, lost or probably ruined). Use additional sheet if necessary.																																																																											
See Appendix #3																																																																											
(In case of doubt regarding the truthfulness, list all entries now. Use additional sheet if necessary.)																																																																											
15. POST CRASH EXAMINATION																																																																											
16. DATE OF REPORT (MONTH, DAY, YEAR) (Multiple entries, as stated)		INTERNAL INJURIES																																																																									
17. PERSONS INVOLVED, IF PERSONNEL		IF HOSPITALIZED: GIVE NAME/STREET		PLACE																																																																							
ESTIMATE LENGTH OF HOSPITALIZATION		LIST PRE-EXISTING PHYSICAL DEFECTS PATIENT AT TIME OF POST CRASH EXAMINATION (Ex condition permits)																																																																									
FACON: MEDICAL NAME, CITY, STATE, ZIP CODE		None 23																																																																									
Results to follow:																																																																											
18. INJURIES																																																																											
19. INCONSCIOUSNESS <input type="checkbox"/> SHORT DURATION-LITTLE SIGNIFICANCE <input type="checkbox"/> OTHER (specify)																																																																											
READ CEREBRAL CONCUSSION <input type="checkbox"/> MINOR <input type="checkbox"/> SERIOUS <input type="checkbox"/> CRITICAL <input type="checkbox"/> FATAL <input type="checkbox"/> MINOR FACIAL INJURIES <input type="checkbox"/> MAJOR FACIAL INJURIES																																																																											
INJURIES																																																																											
MINOR EYE INJURIES <input type="checkbox"/> RIGHT EYE <input type="checkbox"/> LEFT EYE MAJOR EYE INJURIES <input type="checkbox"/> RIGHT EYE <input type="checkbox"/> LEFT EYE																																																																											
TYPE SKULL VERTebrae (specify no.) SHOULDER RIBS PEL- UPPER ARM/LOWER ARM HAND UPPER LEG/LOWER LEG FOOT																																																																											
BONES CRANIAL FACIAL CERV THOR LUMBAR SACRAL COCCYX VIG LEFT HIGH LEFT RIGHT LEFT HIGH LEFT RIGHT HIGH LEFT HIGH RIGHT																																																																											
SIMPLE FRACTURE																																																																											
COMPOUND FRACTURE																																																																											
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DIS- LOC- CA- TION JAW SHOULDER ELBOW WRIST HIP JOKE KNEE HIND FOOT																																																																											
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20. AREA OF INVOLVEMENT LACERATIONS CONTUSION/SPRAIN/STRAIN ABRASIONS																																																																											
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BAILOUT AND EJECTION REPORT
(Use separate form for each person.)

(b) (6)

(b)

INDICATED AIR SPEED (Knots)	200 to 300 Knots (Estimated)	FEET IN STIRRUP	YES <input checked="" type="checkbox"/>
ALTITUDE ABOVE SEA LEVEL	25 to 28,000 Feet	SEAT BELT FASTENED	NO <input type="checkbox"/>
ALTITUDE ABOVE TERRAIN	22 to 23,000 Feet	SHOULDER HARNESS LOCKED	NO <input type="checkbox"/>
ATTITUDE OF AIRCRAFT	Inverted spin	SHOULDER HARNESS TIGHT	NO <input type="checkbox"/>
		DISCONNECT USED (Give type)	NO <input type="checkbox"/>

2. WERE ANY FORCES PRESENT YES NO
Negative and lateral 4g forces, results of inverted spin.
3. LIST DIFFICULTIES EXPERIENCED IN EJECTION (Experiencing energy, positioning, ejection, etc.)

See addendum #5

4. AFTER EJECTION

SWIMMING AND TUMBLING AFTER EJECTION

2 to 5 seconds (Estimated)

DID SEAT FALL AWAY FROM AIRCRAFT YES NO (If yes, describe)

M-14 Tumbling after ejection

AUTOMATIC SEAT BELT

BELT NOT USED

AUTOMATIC RIP CORD

DEVICE USED

TIME IN SEATBELT (Leave in Seconds)

2 65 seconds (Estimated)

WENT ANY DIFFICULTIES YES NO (If yes, describe)FELL UNCONSCIOUS IN LEAVING SEAT YES NO

5. BAILOUT ONLY

6. BAILOUT AND EJECTIONS

INDICATED AIRSPEED (KNOTS)

WAS FREE FALL DELIBERATE

 YES NO

ALTITUDE ABOVE SEA LEVEL

WAS BAILOUT OXY-

GEN AVAILABLE YES NO USED YES NO TYPE

Gas

ALTITUDE ABOVE TERRAIN

ALTITUDE RPP CORD PULLED

Not Pulled

ATTITUDE OF AIRCRAFT

ALTITUDE CHUTE OPENED

15,000

BAILOUT OVER RIVERBED

BODY POSITION WHEN CHUTE OPENED

Face down (approx 20 degrees)

BAILOUT OVER LEFT SIDE

TYPE PARACHUTE

M-5 SIZE CANOPY 26 FEET

BAILOUT INVERTED

CHUTE HARNESS CINCHED TIGHT

 YES NO

6. LIST ANY DIFFICULTIES IN FALLING RPP CORD OR CHUTE OPENING

CHUTE DAMAGE

None

None

7. DESCRIBE NATURE OF TERRAIN LANDED ON (Rocky, rocky, sandy, etc.)

Rocky hillside in desert area.

8. POSITION OF BODY ON LANDING

Front first

9. DIFFICULTIES IN REMOVING HARNESS AND SPREADING CHUTE (windforce, knots, direction)

Experienced some difficulty in removing harness because of inability to use left arm.
The wind was very calm at the point of landing and the parachute collapsed without difficulty.

10. NUMBER OF RESCUE TEAM MEMBERS

0

11. HELICOPTER FROM BOSS China Lake, No difficulty

12. LAST TRAINING INDIVIDUAL AND FOR BAILOUT OR EJECTION

Has had ejection seat lecture and firing several times while on flight status.

13. SAFETY EQUIPMENT	TYPE	USED	DAMAGED	LOST	DESCRIPTION OF DAMAGE OR WHEN LOST
HELMET	M-5	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		Damage to visor cover
GOGGLES	M-5	<input checked="" type="checkbox"/>			
OXYGEN MASK	A-13A	<input checked="" type="checkbox"/>			
CLOTH PROTECTOR M-5 A & B suit	I				
GLOVES	Night	<input checked="" type="checkbox"/>			
SHOES	Flight	<input checked="" type="checkbox"/>			

14. OTHER SURVIVAL EQUIPMENT (List all items, effectiveness and damage)

Addendum #1

On the morning of 14 May 1958, VAF-451 was undergoing an Operational Readiness Inspection at U.S.M.C.A.A.S. Mojave, California. At approximately 0830 left. (b) (6) acting as the flight leader, took off from U.A.M.C.A.A.S. Mojave on a missile tactics hop. The flight consisted of three other pilots in addition to Lt. (b) and a pilot inspector. The flight became airborne without incident and proceeded to the Mojave "B" Gunnery Range. The range was entered at 0850 after permission was obtained from the NOTS China Lake Tower.

Lt. (b) aircraft was armed with a five inch target rocket on the left wing and 4 "Sidewinder" on the right wing. Immediately after entering the range, Lt. (b) wing man fired a five inch target rocket which Lt. (b) was able to track successfully. Lt. (b) then pulled the nose of his aircraft about 30 degrees above the horizon and rolled his aircraft to an inverted position as he had briefed prior to the hop. He intended to fire the target rocket from station #1 and the sidewinder from station #4. When his nose was about 10 degrees above the horizon he fired his target rocket. The rocket fired, but failed to separate from the Aero-3A-Launcher and was seen to burn by other flight members for several minutes. The aircraft entered a violent right yaw which Lt. (b) was unable to control. The aircraft then apparently went into an inverted spin (although the witnesses do not all agree on this point). Lt. (b) reduced his throttle to idle and applied forward stick, after several violent spins he felt that he had no control of the aircraft and elected to eject. The exact altitude and air speed at the time of the ejection is not known, but they were estimated by the pilot to be 25 to 28,000 feet altitude and the air speed at 230 to 300 knots. Lt. (b) experienced difficulty in positioning himself for ejection because of the violent spinning by the aircraft which forced him towards the canopy. He was unable to get his feet in the stirrups and was able to reach the face curtain only by flexing his neck and grasping the curtain with his right hand. He was unable to get his left hand above his head. The canopy jettisoned immediately, striking the upper portion of his helmet and tearing the button from the visor. The seat ejected without difficulty, the automatic seat belt functioned and Lt. (b) separated from the seat easily. He lost his wrist watch and knee pad at the time of the ejection, but all other equipment remained secure. He experienced some tumbling after ejection, but was able to stabilize his body by abducting both legs. His barometric parachute opener evidently functioned without difficulty at 15,000 feet. The parachute deployed without tearing or fouling. He landed on a rocky hillside and suffered a (b) (6). He experienced no dragging and was able to fold his parachute without difficulty. Lt. (b) then contacted the other members with his emergency radio (VMO-17). The helicopter from NOTS China Lake, then arrived and evacuated Lt. (b) to the China Lake Dispensary.

Shortly after the deployed parachute had been seen by the other members of the flight, the abandoned aircraft was seen to crash into the side of a mountain approximately one mile from the site that Lt. (b) landed on the ground. The aircraft exploded on contact and disintegrated. Examination of the wreckage revealed the target rocket burned out and was still in place on the Aero-3A-Launcher Rail which was on the left wing.

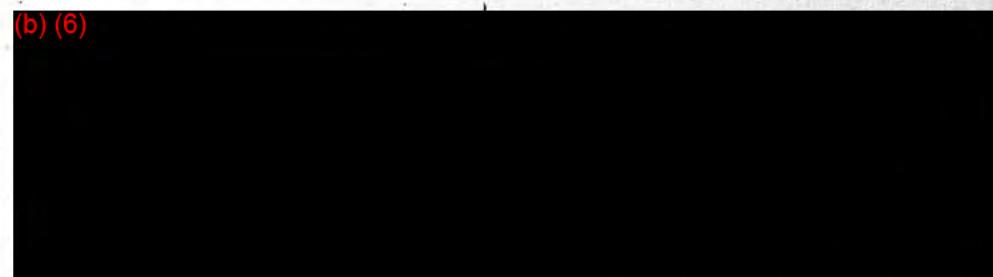
APPENDIX #1 TO MEDICAL OFFICER'S REPORT OF AIRCRAFT ACCIDENTS/INCIDENTS AND GROUND ACCIDENTS, SERIAL 7-58

Addendum #3

All of the safety equipment functioned in a manner in which it was intended. Apparently the forward bow of the canopy struck the button on the helmet causing slight damage, (see photographs). The balloon oxygen bottle was pulled after smooth separation from the seat.

Addendum #1

(b) (6)



Addendum #5

Because of the violent turns of the aircraft in an inverted spin Lt. (b) had some difficulty in reaching his face curtain as his hood was in contact with the canopy. However he did reach the face curtain with his right hand and did eject successfully. He was also unable to place his feet in the stirrups because of the violent spinning of the aircraft. The quick disconnects of his oxygen equipment apparently functioned with no difficulty. The radio and "G" suit connections separated on ejection.

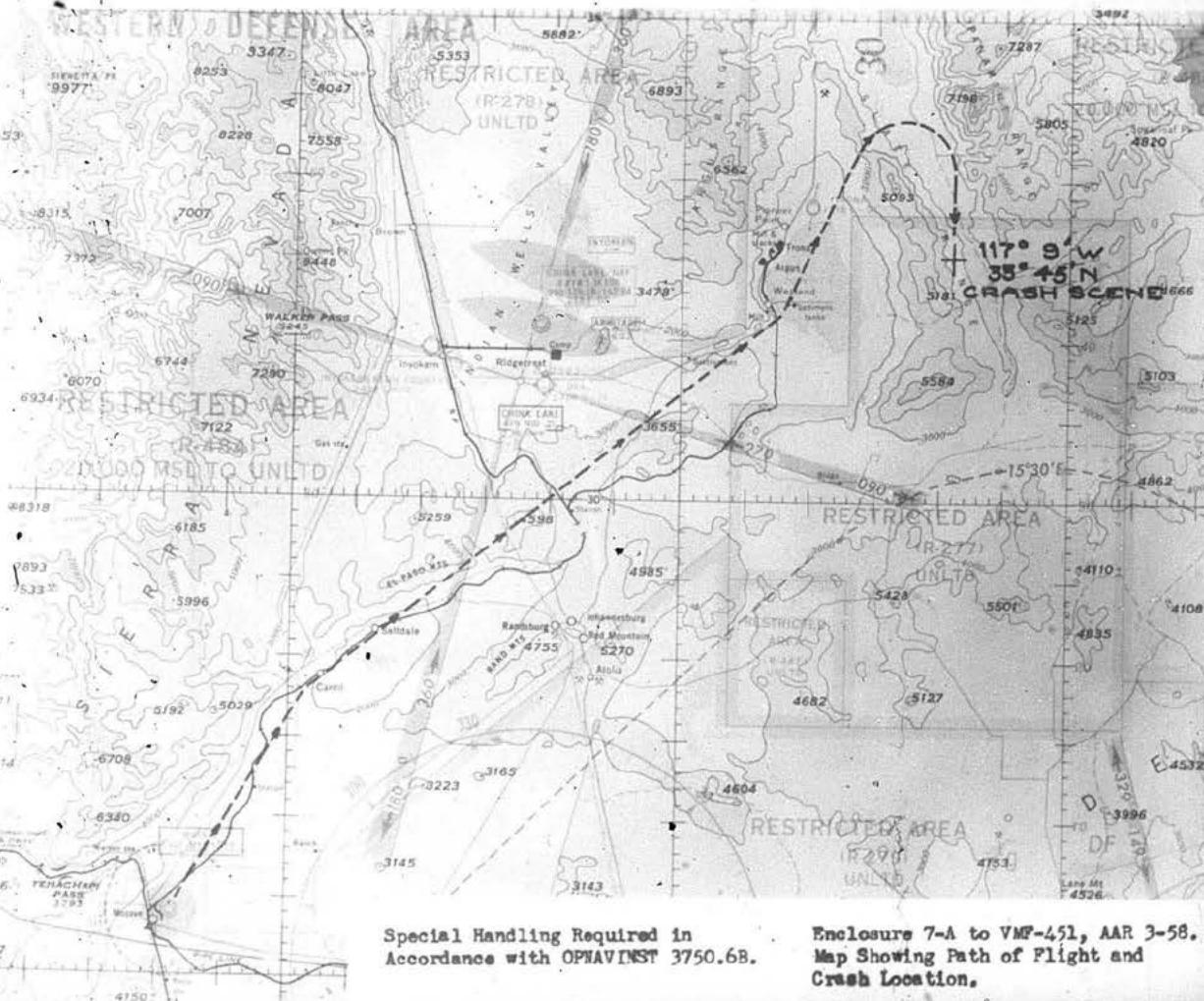
The forward bow of the canopy struck Lt. (b) (6) helmet causing minor damage. He experienced minor tumbling while freefalling. But was able to stabilize his body face down by extending his lower extremities. He pulled his bailout bottle after separation from the seat, and his oxygen equipment functioned well. The barometric parachute opener functioned at 15,000 foot.

Addendum #6

Summary & Conclusions

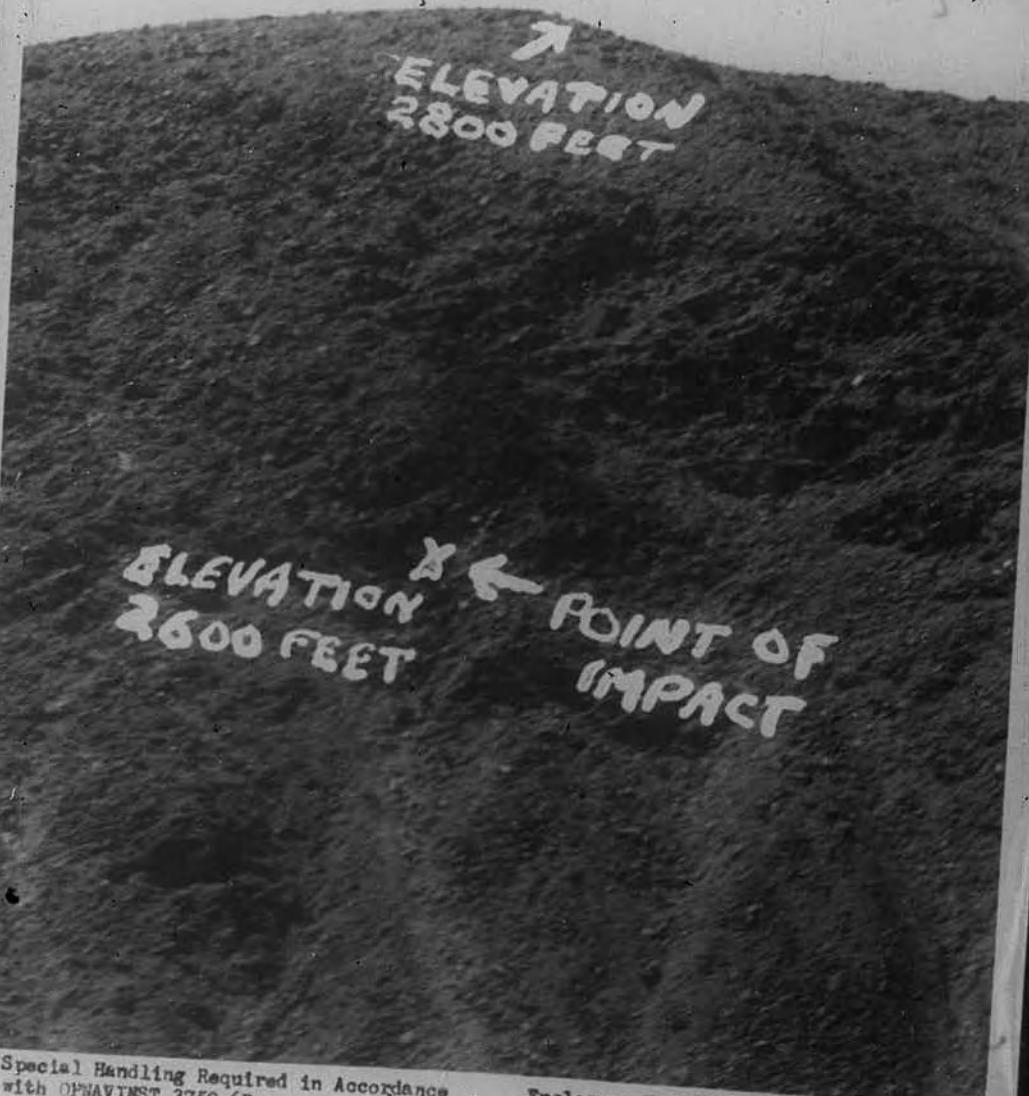
The apparent primary cause of this accident was malfunctioning of the target rocket and launcher. The forces developed by the rocket that was fired but still attached to the left wing put the aircraft into a yaw and then an inverted spin. When the pilot found that he had no response of the aircraft to corrective procedures, he elected to eject which he did successfully with but minor injury to himself.

(b) (5)



Special Handling Required in
Accordance with OPNAVINST 3750.6B.

Enclosure 7-A to VMF-451, AAR 3-58.
Map Showing Path of Flight and
Crash Location.



Special Handling Required in Accordance
with OPNAVINST 3750.6B

Enclosure 7-B to VMP-451, AAR 3-58
Showing Terrain in the Vicinity of
the Impact Area.



Special Handling Required in Accordance
with OPNAVINST 3750.6B

Enclosure 7-C to VMF-451, Mar 3-58
Showing Impact Area and Target
Rocket as found.



Special Handling Required in Accordance
with OPNAVINST 3750.6B

Enclosure 7-D to VMF-451, AAR 3-58.
Showing Target Rocket in its
Original Position Following Impact.



Special Handling Required in Accordance
with OPNAVINST 3750.6B

Enclosure 7-E to VMF-451, AAR 3-58.
Showing Target Rocket, Pylon, and
Launcher After it was Extricated
from Rubble at Impact Area.

35



Special Handling Required in Accordance
with OPNAVINST 3750.6B

Enclosure 7-F to VMP-451, AAR 3-58.
Showing Damaged Helmet and Visor.